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# The German Basic Electronic Data Interchange Agreement Versus the European Model EDI Agreement: Some Reflections on German Law

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## 1. Introduction

Where trading partners use EDI (Electronic Data Interchange), a number of questions arise. From a technical point of view those questions concern for instance message standards, communication protocols or data communication networks which shall be used. From a legal point of view, questions arise as to the liability of trading partners and the evidential value or the confidentiality of EDI messages. Those questions can be dealt with in an individual agreement which can be drafted by the trading partners themselves. Another option for trading partners is, of course, to use a contractual agreement which has already been drafted: a standardized interchange agreement.

On a national level, numerous interchange agreements have been drafted until now. Thus, interchange agreements exist for instance in the United States, Canada, England, France, Australia and in the Netherlands.[1] In Germany, the development of an interchange agreement started rather late. Since the spring of 1991 some work has been carried out by a national working group consisting of a number of technical and legal experts.[2] The result of the work is the German Basic Electronic Data Interchange Agreement, published in May 1994.[3]

On the European level, the development of an interchange agreement started in 1988 as part of the TEDIS programme of the EC Commission. As a result of the research work which has been carried out within the first phase of the TEDIS programme (1988–1989), a first draft of an EC interchange agreement was published in May 1991.[4] This draft has been completely reworked during the second phase of the TEDIS programme (1991–1994). The finalized version of the first draft was finally presented by the EC Commission in October 1994.[5]

As a result, German EDI trading partners have now two options to choose from. They can either use the German Basic Electronic Data Interchange Agreement or the European Model EDI Agreement as a contractual framework. The decision as to which interchange agreement to choose will then be made according to the type of transaction intended, whether it is being dealt with at a national or international level and what sort of specific requirements that transaction requires.[6]

The following article will discuss both the German Basic Electronic Data Interchange Agreement and the European Model EDI Agreement by focusing on some of the major legal aspects which are dealt with in both agreements.

## 2. Legal Aspects Dealt With in Both Interchange Agreements

### 2.1. *Conclusion of Contracts*

Trading partners will often use EDI as a means to conclude contracts. As an example one trading partner may order its goods by sending an *EDIFACT Purchase order message* to the information system of the other trading partner. The latter may then confirm this message by sending a corresponding *EDIFACT Purchase order response message* in return. The intended result will be, however, a purchase contract concluded by means of EDI.

Where trading partners use EDI as a means to conclude contracts, the question arises as to the *time* and *place* of contracts so concluded.[7] Trading partners will often decide to deal with those questions in their interchange agreements for mainly two reasons.

The first reason is that the determination of time and place may sometimes prove to be difficult under existing national law. As an example, a distinction has to be made under German contract law between contracts concluded between present and absent parties. This distinction is important as to the time of conclusion of contracts.[8] One of the main questions in the discussion in Germany is now, whether, because of the nature of EDI, contracts concluded in this manner shall be regarded as those between absent or those between present parties.[9] The result however is legal uncertainty which can be reduced by means of an interchange agreement.[10]

The second reason is that the parties may find another solution as the one delivered by national law as more appropriate in the context of EDI. The parties may then also decide to address the question of time and place of conclusion of contracts to their interchange agreement.[11]

Both interchange agreements deal with the time of conclusion of contracts. The European Model EDI Agreement deals moreover with the place

of conclusion of contracts. The provisions which can be found are different however.

The European Model EDI Agreement assumes that a message exchanged by means of EDI shall in principle become effective *upon receipt of the message*. Thus, Art. 3.3 of the European Model EDI Agreement provides that a contract effected by the use of EDI shall be concluded at the time and place where the EDI message constituting acceptance of an offer reaches the computer system of the offeror.

Another approach however is chosen by the German Basic Electronic Data Interchange Agreement which provides that a message shall become not effective upon receipt of the message but rather *upon receipt of the acknowledgment of the message*. Based on this assumption, three situations are dealt with specifically:

a) direct computer-to-computer interchanges on the basis of data transmission;
b) direct computer-to-computer interchanges on the basis of data retrieval;
c) interchanges effected via a Value Added Network (VAN) or other intermediary.

Where trading partners use EDI, they will often communicate on the basis of *data transmission*. In this case, a message to be exchanged may then be sent by the sender to the information system of the recipient.[12] This situation is specifically dealt with in Article 8 Paragraph 1 of the German Basic Electronic Data Interchange Agreement which provides that, where the parties communicate on the basis of data transmission, a message shall be regarded as received when received by the recipient's communications equipment and when an *automatic confirmation of receipt* has been received by the sender's communications equipment.[13] Until so received, no EDI message shall be of any legal effect. A contract is then, after all, concluded at the time when an EDI message constituting acceptance has been received by the offeror's communications equipment and when an *automatic confirmation of receipt* has been received by the communications equipment of the transmitter of the acceptance.

In some cases, trading partners will not communicate on the basis of data transmission but on the basis of *data retrieval*. In such a case, a message to be exchanged will not be sent by the sender to the recipient's information system but rather retrieved by the recipient from the sender's information system.[14] Data retrieval is for instance used as a means of communication in the German automobile industry.[15] Where the parties decide to communicate on the basis of data retrieval, it is in principle assumed that a message shall be regarded as received when it has been made available for retrieval in the

sender's communications equipment and has been retrieved by the recipient there, and when an *automatic confirmation of retrieval* from the recipient's communications equipment has been received by the sender's communications equipment (Article 8 Paragraph 2 of the German Basic Electronic Data Interchange Agreement).

Finally trading partners can also decide to communicate *through a Value Added Network (VAN)*. In this case, each party will probably have an electronic mailbox with that VAN. The sender may then transmit its message to the VAN. Here the message is stored in the recipient's electronic mailbox. Once the message is stored in this manner, the message can be retrieved by the recipient from its mailbox.

Problems can arise, however, where the recipient fails to empty its mailbox. If the retrieving message is an acceptance message, the recipient would easily be able to hinder the conclusion of a contract by simply not retrieving the message from its mailbox. Those difficulties can be avoided by including a provision in an interchange agreement which provides that EDI messages can be received irrespective of retrieval. Thus, Article 8 Paragraph 3 of the German Basic Electronic Data Interchange Agreement provides that, when communicating through a VAN, a message shall be regarded as received when the message has entered the recipient's value added network mailbox and an (automatic) *confirmation from the VAN* has been received by the sender's communications equipment.

The European Model EDI Agreement does not specifically deal with data transmission, data retrieval or communication via a VAN but contains, as mentioned before, in its Article 3.3 a general rule which provides that a message shall be regarded as received at the time and at the place where the message reaches the computer system *of the trading partner*. With regard to the legal problems mentioned above, trading partners should therefore provide that, when communicating through a VAN, each party shall be in principle obliged to check its electronic mailbox on a regular basis.

Two further provisions can be found in the German Basic Electronic Data Interchange Agreement.

Article 8 Paragraph 4 of the German Basic Electronic Data Interchange Agreement contains an exception with regard to those messages which have been sent and received *outside the normal business hours* of the trading partner. According to this provision it is assumed that messages which arrive outside the normal business hours of the trading partner shall be regarded as received in principle at the start of the business hours on the next business day. To avoid legal uncertainties, business hours and business days should be defined by the trading partners in Appendix 8 of the German Basic Electronic Data Interchange Agreement ("Time Regulations").

Article 8 Paragraph 5 of the German Basic Electronic Data Interchange Agreement finally deals with the question when a message shall be regarded as received in the case that a *separate acknowledgment* is requested. Where the parties require a separate acknowledgment as by mail, fax or telex, the provision states that a message shall be regarded as received when this separate acknowledgment is given.

### 2.2. *Liability*

Where trading partners use EDI, mistakes can happen. Those mistakes can be of technical nature. As an example, the communication between trading partners may fail as a result of a hardware or software malfunction or as a result of a telecommunications system breakdown. Those mistakes can also be of human nature. The communication between trading partners may for example fail as a result of the incorrect use of programs or as a result of the fact that one of the trading partners does not comply with the hard- or software or the message standard agreed on. Mistakes can finally happen as a result of modification, destruction, fraudulent misappropriation or non-authorized use of EDI messages.[16] If one of the trading partners suffers loss or damage as a result of those mistakes, the question arises as to the liability of trading partners for EDI-risks.

This question is dealt with in both interchange agreements, but in a different way. The European Model EDI Agreement concentrates on three different aspects of liability.

One aspect dealt with in the European Model EDI Agreement concerns the parties' liability in the case of so called "*force majeure*." Failure on the part of one of the trading partners to perform its obligations can sometimes be the result of circumstances beyond the control of the party concerned. As an example, one of the trading partners may fail to perform its obligations as a result of a strike or a situation of mechanical, electronic or communications failure.[17] In this case, the question arises as to the party's liability for any damages which may ensue. This question is dealt with in Article 11.2 of the European Model EDI Agreement which provides that the party's responsibility shall be excluded in the case of "*force majeure*."

Another aspect which is dealt with concerns the parties' liability in the case of an *intermediary's failure*. In a typical EDI transaction, intermediaries are often involved to perform such services as the transmission, logging or processing of EDI messages. Where a loss arises as a result of an intermediary's failure, the question arises which party shall be responsible for the damage so caused. This question is dealt with in Article 11.3 and Article 11.4 of the European Model EDI Agreement. Article 11.3 of the European Model EDI Agreement provides that, in the case of an intermediary's failure,

responsibility shall be in principle upon the party having engaged the intermediary. An exception is however made in the case where the engaging party was required to do so by the other party. In this case it is assumed that the responsible party shall not be the one having engaged the intermediary but the one having required the engagement (Article 11.4 of the European Model EDI Agreement).

Article 11.1 of the European Model EDI Agreement excludes finally the parties' liability for any *special, indirect or consequential damages*.[18]

When drafting the German Basic Electronic Data Interchange Agreement, agreement was reached that the question of liability should not be dealt with only by single aspects but in a much more comprehensive way. The reason for this decision is however mainly due to the legal situation under German Law. Under German Civil Law, liability is in general based on the *principle of fault*. As a result, any failure to comply with contractual obligations or other civil wrong can therefore lead only to liability when committed through fault. When drafting the German Basic Electronic Data Interchange Agreement, one of the questions which has been discussed was however if such a liability framework would be sufficient in the context of EDI. Where liability is based on the principle of fault, at least two difficulties may then arise.

One difficulty which has been discussed is that, with EDI as a new form of technology, the standard of care required by the parties might be unclear, so that it is never certain what actually constitutes fault in the context of EDI. Another problem is that, in a computer environment, damages will often arise as the result of the interplay of numerous factors. In such a case, it would then be difficult, if not impossible, to attribute precisely fault liability to one of the parties.[19]

Due to these difficulties, one of the main concerns of the German Basic Electronic Data Interchange Agreement was to provide a liability framework irrespective of any kind of fault. Such a "faultless" liability framework is now included in Article 14 of the German Basic Electronic Data Interchange Agreement.

The main idea of the liability framework provided by the German Basic Electronic Data Interchange Agreement is that the party's liability should be based on the principle of *sphere liability*. Sphere liability means that each party is in principle responsible for any damage arising within its sphere of responsibility, irrespective of any breach of contract or other civil wrong and irrespective of fault (Article 14 Paragraph 1 of the German Basic Electronic Data Interchange Agreement). The party's sphere of responsibility is described in Article 14 Paragraph 2 of the German Basic Electronic Data Interchange Agreement which provides that the *sender's sphere* shall cover its Communications Equipment, its Communications Security and the period

of time until receipt of the message and the *recipient's sphere* shall cover its Communications Equipment, its Communications Security and the period of time following receipt of the message. A definition of the terms "Communications Equipment" and "Communications Security" is included in Article 2 Paragraph 6 and Article 2 Paragraph 7 of the German Basic Electronic Data Interchange Agreement.

Two restrictions are however made with respect to sphere liability.

The first restriction is where a party can prove to have complied with the catalogue of requirements which is annexed to the Agreement as Appendix 12. This catalogue contains a number of obligations of the parties which are considered as to be the most important ones in the context of EDI. In principle, any party can now avoid its sphere liability by proving compliance with its requirements. When a party can prove to comply with the requirements, the other party would be in principle liable for the damage. In the case where both parties can prove to comply with their requirements, the damage may be shared.[20]

To avoid sphere liability, the parties must comply with the following obligations:

- the parties' obligation to make use of the agreed hardware;
- the parties' obligation to make use of the agreed software;
- the parties' obligation to transmit the message according to the agreed message standard and according to the agreed version;
- the parties' obligation to keep a data log;
- the parties' obligation to maintain the communications equipment in a constant working order;
- the transmitter's obligation to protect the integrity of a message by making use of authentication procedures and; corresponding,
- the recipient's obligation to comply with the agreed verification and certification procedures;
- the transmitter's obligation to protect the confidentiality of a message by making use of an encryption technique and; corresponding,
- the recipient's obligation to comply with the agreed decryption technique;
- the parties' obligation to take care of the instructions in the user manual;
- the parties' obligation to name the responsible persons;
- the transmitter's obligation in the case of a failure of transmission to transmit the message again by stating clearly that the transmission is a repeated one;
- the parties' obligation to inform each other immediately in the case of a disruption in the communications system;
- the parties' obligation to make a plausibility check;
- the parties' obligation to participate in the search for errors.

The second restriction is made where an error is or should, with reasonable care, be obvious to the recipient. In such a case, where the damage could be avoided by the recipient, there would be no sensible reason for the sender's responsibility. Thus, Article 14 Paragraph 4 of the German Basic Electronic Data Interchange Agreement provides that the sender's liability shall be excluded in this case.

The following aspects of liability are moreover dealt with in the German Basic Electronic Data Interchange Agreement.

Article 14 Paragraph 4 of the German Basic Electronic Data Interchange Agreement is dealing with the *extent of compensation*. Where liability is established, the responsible party must compensate the party which has suffered loss or damage. In principle, this compensation will include any loss or damage that may ensue. In some cases, EDI errors can be very costly. An example is, where companies rely on EDI to support such techniques as Just-in-time (JIT). In such a relationship errors can easily lead to an interruption of production which may cause economic loss to a great extent. The parties may therefore consider if they wish to limit their compensation obligation to a maximum amount. The German Basic Electronic Data Interchange Agreement provides for such a possibility in its Article 14 Paragraph 4.

Article 14 Paragraph 3 of the German Basic Electronic Data Interchange Agreement deals moreover with the *costs of the search for errors*. Where a damage occurs, it might be sometimes difficult to clarify its reason. In such a case, the question arises which party should bear the costs of the search for errors. This question is dealt with in Article 14 Paragraph 3 of the German Basic Electronic Data Interchange Agreement. According to this provision it is in principle assumed that each party shall bear the costs of identifying errors which are located or arise within its sphere of responsibility. If an error occurs which cannot definitely be assigned to either party's sphere of responsibility, the party most likely to have been in a position to avoid the error shall bear the entire costs of the search for errors (Article 14 Paragraph 3 s. 2 of the German Basic Electronic Data Interchange Agreement). If this can also not be clarified, the costs of the search for errors shall be shared (Article 14 Paragraph 3 s. 3 of the German Basic Electronic Data Interchange Agreement).

According to the catalogue of requirements which is annexed to the Agreement as Appendix 12, each party is moreover obliged to participate in the search for errors.[21]

Article 15 of the German Basic Electronic Data Interchange Agreement finally deals with the party's responsibility in the case of an *intermediary's failure*. Article 15 Paragraph 1 of the German Basic Electronic Data Interchange Agreement provides that the risk of an intermediary's failure shall be

in principle upon the party having engaged the intermediary. If both parties engage the same intermediary, it is assumed that the responsible party shall be the one which, in relation to the other party, has commissioned the intermediary to specifically perform or fulfill certain of its own tasks, rights and obligations under the German EDI Model Agreement (Article 15 Paragraph 2 of the German Basic Electronic Data Interchange Agreement).

### 2.3. *Evidence*

The use of EDI can lead to disputes between trading partners. In a number of cases those disputes can be settled by trading partners as a result of negotiation. If such negotiation fails and if the parties take their disputes to court, the law of evidence comes into play.

Where trading partners use EDI, business transactions are no longer paper-based but electronically performed. Paper documents are replaced by EDI messages. The result is however that, in an EDI environment, paper documents are no longer available as a means of evidence in a legal proceeding. Where EDI messages replace paper documents, the question is to which extent EDI messages can operate as evidence before a court.

The German Code of Civil Procedure ("Zivilprozeßordnung") describes five types of evidence which can be used in a legal proceeding to prove a disputed fact. Those types of evidence are:

- proof by witness testimony ("Zeugenbeweis");
- proof by expert testimony ("Beweis durch Sachverständige");
- proof by examination of the parties ("Beweis durch Parteivernehmung");
- proof by documentary evidence ("Beweis durch Urkunden");
- proof by inspection ("Beweis durch Augenschein").

Looking at the different types of evidence, the discussion in Germany is mainly concentrated on the question whether or not EDI messages can be used as documentary evidence or only for the purpose of proof by inspection.[22] The answer to this question however is of some importance with regard to the legal consequences involved. Depending on the type of evidence, the legal situation differs.

Documentary evidence has the advantage that a document in the hand of a party giving evidence is in most of the cases a reliable means to prove a disputed fact. In this case, a number of specific rules apply which provide that a (signed) document shall constitute evidence of the facts recorded therein unless the other party can prove that the document is not authentic. The party's position before a court is however different in the case of proof by inspection where no specific rules apply. In this case, it is in principle assumed that the court itself can evaluate the evidence in conformity to its free conviction

(*principle of free evaluation of evidence*). The success of such evidence is however less certain than in the case where documentary evidence applies.[23]

Most commentators assume however that, with respect to EDI, documentary evidence is not possible as EDI messages (as well as screen displays or printouts of EDI messages) cannot comply with the definition of a document.[24] As a result, EDI messages may then be used for proof by inspection with the legal consequences mentioned above.

Taking into account those difficulties, both interchange agreements deal with the question of evidence. The approach to this question is similar:

The European Model EDI Agreement assumes that, in principle, all EDI messages exchanged should have the same evidential value as written documents. Thus, Article 4 of the Agreement provides that, to the extent permitted by national law and to the extent EDI messages have been maintained in accordance with the terms and conditions of the Agreement, they shall be admissible before the Courts and shall constitute evidence of the facts contained therein unless evidence to the contrary is adduced.

A similar provision can be found in Article 10 of the German Basic Electronic Data Interchange Agreement which provides that EDI messages shall have the same force of evidence as written documents if they comply with the definition of an *Electronic Certificate*. A definition of the term "Electronic Certificate" is given by Article 2 Paragraph 9 of the German Basic Electronic Data Interchange Agreement which provides that an Electronic Certificate means an *Electronic Document*, the contents of which are specifically verifiable as a result of certain ancillary conditions such as contractual agreements, authentication and coding procedures.[25] An example of such an Electronic Document is in particular any EDI message to which an electronic signature has been applied.[26]

Where trading partners decide to include a provision in their interchange agreement such as Article 10 of the German Basic Electronic Data Interchange Agreement or Article 4 of the European Model EDI Agreement, the question remains as to the legal value of those evidence agreements. From a German point of view, the answer to this question differs depending on the way of dispute settlement.

In the case where trading partners decide to have their disputes solved by a *German Court*, most commentators assume that contracts stating the value of evidence would not bind a judge as they are contrary to the principle of free evaluation of evidence.[27] As a result, any kind of agreements such as Article 10 of the German Basic Electronic Data Interchange Agreement or Article 4 of the European Model EDI Agreement would be of no help to improve the evidential situation in the case of a legal proceeding before a German court.[28]

The legal situation is however different in the case where the parties decide to resolve their dispute by way of *arbitration*. Where the parties choose arbitration, they are in principle free to determine the rules of procedure relating to the arbitration. As a result, most commentators assume therefore that a court of arbitration would be bound to observe those contracts stating the value of evidence such as Article 10 of the German Basic Electronic Data Interchange Agreement or Article 4 of the European Model EDI Agreement.[29]

Taking into account those considerations, this is mainly why the German Basic Electronic Data Interchange Agreement provides, in its Article 22, that any disputes in connection with the Agreement or an Individual Agreement or in connection with their validity, shall be finally decided by way of arbitration.[30]

### 2.4. *Confidentiality*

Confidentiality is another issue dealt with in both interchange agreements. In principle, three problems arise.

a) The receiver of an EDI message can transmit the message or can disclose its content to another third party. The third party would then benefit from the information enclosed which may cause damage to the sender of the message.
b) With EDI messages stored in a party's computer system, a third party can easily read the messages once having access to the computer system.
c) A third party can intercept and read an EDI message on its way of transmission.

The receiver of an EDI message can, as mentioned before, transmit the message or disclose its content to another unauthorized party. Trading partners may therefore decide if and to which extent EDI messages shall be handled confidentially. In principle, three agreements can be reached.

- The parties can decide that *all* EDI messages exchanged shall be handled confidentially. Such an agreement may however be of some advantage in an EDI environment which requires in general a high degree of confidentiality. An example for such an EDI environment may be a financial EDI system.
- On the other hand, confidentiality is not a big problem in EDI systems where no confidential information is exchanged. Trading partners may then decide that *none* of the EDI messages exchanged shall be handled confidentially.
- Trading partners can finally decide that *some* of the EDI messages exchanged shall be handled confidentially.

Both interchange agreements deal with the confidential handling of EDI messages but in a different way. The German Basic Electronic Data Interchange Agreement assumes that, in most EDI systems, a high degree of confidentiality will be required. Thus, Article 11 Paragraph 1 of the Agreement provides that, unless otherwise agreed, *all* EDI messages exchanged by the trading partners shall be handled confidentially. The approach is however different in the European Model EDI Agreement which provides that, unless otherwise agreed or specified, *no* EDI messages shall be handled confidentially (Article 7.1 of the European Model EDI Agreement).

Where confidentiality is established, this obligation implies that no party shall transmit the message concerned nor disclose its content to another third party. Those obligations are for instance explicitly referred to in Article 7.1 of the European Model EDI Agreement. Another problem is however that, with the number of persons involved in the processing of messages, there is an increasing risk that messages can be transmitted or that its content can be disclosed. Taking into account this aspect, Article 11 Paragraph 1 of the German Basic Electronic Data Interchange Agreement provides, as an additional obligation, that the parties must ensure to restrict the number of persons dealing with the processing of EDI messages as far as possible.

Confidentiality is, as mentioned before, as well a *matter of security*. Where EDI messages are stored in a party's computer system, a third party can easily read the messages so stored once having access to the computer system. Further, once having access, EDI messages can be altered, unauthorized sent or even destroyed.[31] Those risks can be however minimized if trading partners protect their computer systems against unauthorized access. A corresponding obligation is therefore included in both the German Basic Electronic Data Interchange Agreement as well as in the European Model EDI Agreement (Article 12 of the German Basic Electronic Data Interchange Agreement and Article 6.1 of the European Model EDI Agreement).

Where trading partners protect their computer system against unauthorized access, EDI messages are in principle safe as long as they are stored in a computer system so protected. Another risk to confidentiality is the transmission of an EDI message. Once the message is sent, it is no longer protected and can be intercepted and read by a third party. The parties should therefore consider if it is necessary with regard to certain EDI messages to use additional security measures such as *encryption techniques* to protect their EDI messages on its way of transmission. The advantage of encryption is that a person which is not in the possession of the encryption key cannot decrypt and therefore cannot read the message. The possibility of making use of encryption to protect the confidentiality of EDI messages is therefore explicitly referred to in Article 7.3 of the European Model EDI Agreement.

The German Basic Electronic Data Interchange Agreement assumes, similar to the European Model EDI Agreement, that trading partners must decide if they wish to make use of encryption. Where the parties decide to use encryption, they must decide which encryption technique they wish to use. The parties may then specify their preferred encryption technique in Appendix 1 of the German Basic Electronic Data Interchange Agreement ("Electronic Signatures and Encryption").

Article 15 Paragraph 3 of the German Basic Electronic Data Interchange Agreement finally deals with the situation where the parties decide to make use of the services of a Value Added Network (VAN). When the parties involve a Value Added Network to perform such services as the transmission or logging of EDI messages, in principle the same questions arise as outlined above. EDI messages stored in a VAN's computer system can be read by a third party, once having access to the VAN's computer system. The VAN can transmit EDI messages or disclose its content to another unauthorized party. The content of EDI messages can be altered and so on. Those risks can be in principle minimized by reaching an agreement between the VAN and the party engaging the VAN which obliges the VAN to maintain confidentiality with regard to the messages concerned. Thus, Article 15 Paragraph 3 of the German Basic Electronic Data Interchange Agreement provides that, where communicating through a VAN, the parties must bind any VAN whom they employ to the same degree of confidentiality and security as agreed between the parties themselves. The European Model EDI Agreement does not contain any provision dealing with this question.

### 2.5. *Record Keeping*

Record keeping is an essential obligation under German law. Any person managing a business is in principle obliged to record keeping. Record keeping requirements are largely described by the German Commercial Code ("Handelsgesetzbuch") as well as by the German General Income Tax Code ("Abgabenordnung").[32]

In principle, most of the existing record keeping requirements can be met by electronic means. Thus, the parties are in principle allowed to keep their business books by means of a computer. Further, with some exceptions, all documents and information required can in principle be stored electronically by the parties.[33]

Where the parties make use of computer technology, they must ensure to comply with a number of additional requirements which have been developed for the specific purpose of electronic record keeping.[34]

Article 16 Paragraph 1 of the German Basic Electronic Data Interchange Agreement describes some of the major record keeping requirements which exists under German Law. Thus, the parties must:

- record EDI messages in their entirety;
- record EDI messages chronologically;
- record EDI messages in an identifiable manner;
- record EDI messages protected from modification, manipulation, deletion and from being written over; and
- ensure that the content of all EDI messages can at all time be made readable upon appropriate notice.

The same requirements are more or less referred to in Article 8 of the European Model EDI Agreement. Thus, trading partners must:

- record EDI messages completely;
- record EDI messages chronologically;
- record EDI messages unaltered and secure; and
- record EDI messages capable of being reproduced in a human readable form and of being printed, if required.

Another aspect dealt with in both interchange agreements is the *period of storage* as to which messages shall be stored. Under German law, the period of storage differs in principle depending on the nature of the document which has to be stored. Thus, business books, inventory records, opening balances, annual statements, board of management reports and other documents must be stored for instance for a time period of ten years whereas documents such as commercial correspondence and vouchers need to be stored only for a time period of six years.[35] The time period as to which documents must be stored may however differ from country to country. Thus, both interchange agreements provide that trading partners should store their EDI messages in accordance with the time limits specified by the national law of the parties (Article 16 Paragraph 2 of the German Basic Electronic Data Interchange Agreement and Article 8.1 of the European Model EDI Agreement). The European Model EDI Agreement provides moreover that EDI messages should be stored in any case for a time period of at least three years, irrespective of any legal requirements which may exist (Article 8.1 of the European Model EDI Agreement).

Article 8.2 of the European Model EDI Agreement deals finally with the *format of storage*. In principle, EDI messages can be stored in two different formats: The sender of a message will usually use an internal format to create its message. This format can differ from company to company and is commonly named an in-house format. The message will then be translated from the internal format into the agreed EDI message format (i.e. the UN/EDIFACT format). Once the translated message has received the information system

of the receiver it will be translated again into the internal format used by the receiver of the message. Any exchanged EDI message can therefore be stored either in the format in which it has been transmitted and received (the standardized EDI message format) or in the format in which it is translated in the information system of the receiver or from the information system of the sender (the specific in-house format).

The European Model EDI Agreement provides, in its Article 8.2, that the parties must store an EDI message in principle in the format in which it has been transmitted and received (the standardized EDI message format). The reason is mainly that this format can be considered as the only format originally received and will constitute, if necessary, evidence of the EDI message as it has been sent or received, before any translation of the message has happened.[36]

The German Basic Electronic Data Interchange Agreement does not specify the format in which messages shall be stored. As a result, trading partners may therefore decide to store their messages either in the format in which the message has been transmitted and received (the EDI message format) or in the format in which the message has been translated in the information system of the receiver or from the information system of the sender (in-house format).

## 3. Conclusion

The comparison between the German Basic Electronic Data Interchange Agreement and the European Model EDI Agreement shows that both agreements differ on certain fundamental issues. The question at which moment an EDI message must, from a legal point of view, be regarded as received is only sufficiently dealt with by the German Basic Electronic Data Interchange Agreement. The Agreement takes into account that EDI messages can be exchanged by means of data transmission, data retrieval and also effected via a Value Added Network (Article 8 of the German Basic Electronic Data Interchange Agreement). Another important difference can be found with regard to liability. The European Model EDI Agreement concentrates on three liability aspects which are (1) the party's liability in the case of "*force majeure*," (2) the party's liability in the case of an intermediary's failure and (3) the party's liability for certain kind of damages (Article 11 of the European Model EDI Agreement). The approach to liability in the German Basic Electronic Data Interchange Agreement is a more fundamental one. The Agreement does not deal only with some single aspects of liability, but provides a comprehensive liability framework which is based on the *principle of sphere liability* (Article 14 of the German Basic Electronic Data Interchange Agreement).

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## Notes

1. Those interchange agreements are discussed by R. van Esch (1994) Interchange Agreements, *The EDI Law Review* 1: 3– 41. See also the South African Model Interchange Agreement published in *The EDI Law Review* 3: 43–52, 1996.
2. See W. Kilian (1994) Zweck und Inhalt des deutschen EDI-Rahmenvertrages, *Computer und Recht*: 657; W. Seiler (1992) EDI Model Agreements, in: W. Kilian and A. Wiebe (eds.), *Data Security in Computer Networks and Legal Problems*, Beiträge zur juristischen Informatik, Band 17, Toeche-Mittler Verlag, Darmstadt, 165.
3. The German Basic Electronic Data Interchange Agreement is published in: *The EDI Law Review* 3: 53–62, 1996.
4. Commission of the European Communities, The European Model EDI Agreement, Final Draft, May 1991, DG XIII-D-5.
5. Commission Recommendation of 19 October 1994 Relating to the Legal Aspects of Electronic Data Interchange, published in: *The EDI Law Review* 2: 125–147, 1995. To the TEDIS programme of the European Commission see moreover A. Troye (1994) The Development of Legal Issues under the European Union TEDIS Programme, *The EDI Law Review* 1: 195–221.
6. See W. Seiler (1992), *supra* note 2, 165.
7. The determination of the time and place of conclusion of a contract is important with regard to a number of legal consequences it involves, see for instance R. van Esch (1994), *supra* note 1, 19.
8. Depending on the category of contract, two different rules apply: The reception rule ("Empfangstheorie") is applicable for contracts concluded between absent parties whereas the perception rule ("Vernehmungstheorie") applies in the case where contracts are concluded between present parties. See for instance Palandt (1996), *Bürgerliches Gesetzbuch*, 55th ed., G.H. Beck, München, s. 130 annot. 5 ff.
9. See W. Fritzemeyer and S.-E. Heun (1992) Rechtsfragen des EDI (Teil 1), *Computer und Recht*: 130.; J. Fritzsche and H.-M. Malzer (1995) Ausgewählte zivilrechtliche Probleme elektronisch signierter Willenserklärungen, *Deutsche Notarzeitung*: 3 ff.; S.-E. Heun (1994) Die elektronische Willenserklärung, *Computer und Recht*: 595 ff.; W. Kilian (1993) Möglichkeiten und zivilrechtliche Probleme eines rechtswirksamen elektronischen Datenaustausches (EDI), *Datenschutz und Datensicherung*: 606 ff.
10. This is mainly why the European Model EDI Agreement contains a provision relating to the conclusion of contracts, see explanatory note to Article 3.3 of the European Model EDI Agreement.
11. This is mainly why the German Basic Electronic Data Interchange Agreement contains a provision relating to the conclusion of contracts, see explanatory note to Article 8 of the German Basic Electronic Data Interchange Agreement.
12. The term *data transmission* is defined in Article 2 Paragraph 3 of the German Basic Electronic Data Interchange Agreement. Pursuant to this definition "data transmission" means the exchange of messages, controlled by the sender, in the form of a structured quantity of messages with a clearly indicated start and end point.

13. The term *communications equipment* is defined in Article 2 Paragraph 6 of the German Basie Electronic Data Interchange Agreement. Pursuant to this definition "communications equipment" means all the technical appliances and aids belonging to one party, in particular the hardware and software which are used to carry out the Electronic Data Interchange on the basis of the German Basic Electronic Data Interchange Agreement.
14. The term *data retrieval* is defined in Article 2 Paragraph 4 of the German Basic Electronic Data Interchange Agreement. Pursuant to this definition "data retrieval" means the exchange of messages, controlled by the recipient, in the form of a structured quantity of messages with a clearly indicated start and end point.
15. See for instance, Kilian (1994), *supra* note 2, 659.
16. See, for instance, Dubarry et al. (1989), *The Legal Position of the Member States with Respect to Electronic Data Interchange*, EC Commission, 33.
17. See Article 13.2 of the Standard Electronic Interchange Agreement of the United Kingdom and Article 4.5 of the Model Electronic Data Interchange Agreement of the American Bar Association.
18. It should be noted that such a provision might be ineffectual under section 11 no. 7 of the German Code on General Terms and Conditions ("AGB-Gesetz"). This provision states that, as far as intention or gross negligence is concerned, liability cannot be excluded or limited by means of a standard term. This provision is in principle (with some restrictions) also applieable in the commercial area. It is therefore rather questionable if a general exclusion of liability for special damages as provided by Article 11.1 of the European Model EDI Agreement would be of any effect under German Law.
19. See W. Kilian et al. (1994), *Electronic Data Interchange (EDI)*, Aus ökonomischer und juristischer Sicht, Baden-Baden, 133 ff.; W. Seiler (1992), *supra* note 2, 167 ff.
20. See explanatory note to Article 14 of the German Basic Electronic Data Interchange Agreement. See moreover W. Kilian (1994), *supra* note 2, pp. 659 f.
21. See Section 2.2.
22. See, for instance, Dubarry et al. (1989), *supra* note 16, 64 ff.; W. Fritzemeyer and S.-E. Heun (1992), *supra* note 9, 132; W. Kilian et al. (1994), *supra* note 19, 138 ff.; A. Raubenheimer (1993), EDI im Bereich von Steuer und Buchführung, *Computer und Recht*: 19; W. Seiler (1992), *supra* note 3, 170 ff.; H. von Sponeck (1991), Beweiswert von Computerausdrucken, *Computer und Recht*: 270.
23. See Seiler (1992), *supra* note 2, 171.
24. See note 22.
25. The term *electronic document* is defined in Article 2 Paragraph 8 of the German Basic Electronic Data Interchange Agreement as a message for reproducing characters, sounds or pictures.
26. See explanatory note to Article 10 of the German Basic Electronic Data Interchange Agreement.
27. See, for instance, T. Hoeren (1995), Beweisklauseln in EDI-Vereinbarungen, *Computer und Recht*: 513 ff.; W. Kilian et al. (1994), *supra* note 19, 150 ff.; W. Seiler (1992), *supra* note 2, 171.
28. To the legal situation in other European countries see explanatory note to Article 4 of the European Model EDI Agreement. To the need for EC Harmonization in this area see T. Hoeren (1994), Evidential Problems of Electronic Documents – The Need for EC Policies, *The EDI Law Review* 1: 77–81. See moreover Y. Poullet (1994), Probate Law: From Liberty to Responsibility, Some Reflections on Continental European Law, *The EDI Law Review* 1: 83–100.
29. See note 27.
30. See explanatory note to Article 22 of the German Basic Electronic Data Interchange Agreement. See moreover W. Kilian (1994), *supra* note 2, 660.
31. See R. van Esch (1994), *supra* note 1, 11 ff.
32. See in particular §§238–263 of the German Commercial Code ("Handelsgesetzbuch") and §§140–148 of the German General Income Tax Code ("Abgabenordnung").

33. Those exceptions are namely opening balance sheets, annual balance sheets and consolidated balance sheets, see Article 257 Paragraph 3 of the German Commercial Code ("Handelsgesetzbuch").
34. Those requirements are namely the Principles of Proper Electronic Record Keeping ("Grundsätze ordnungsmäßiger Speicherbuchführung") of 5 July 1978, published in: BStBl. 1978, Volume 1, pp. 250–254. See, for instance W. Fritzemeyer and S.-E. Heun (1992), Rechtsfragen des EDI (Teil 2), *Computer und Recht*: 198 f.; W. Kilian et al. (1994), *supra* note 19, 152 ff.
35. See, for instance, Article 257 Paragraph 4 of the German Commercial Code ("Handelsgesetzbuch").
36. See explanatory note to Article 8 of the European Model EDI Agreement.